

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 31, 2023
Hours:	18:00 Hours

Date	Time	Load(MW)
28-Dec-22	18:03:26hrs	629.23

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	Unit-I & IV under Shutdown. Unit-III & V on Standby. 400kV THP- Siliguri Line I & IV on Standby.
		Unit- II	142.94	400kV THP - Siliguri Line - II	89.30	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	174.39	
		Unit- V	0.00	400kV Malbase - Siliguri Line	69.49	
		Unit- VI	125.95	-	-	
		Total	268.89	Auxiliary Consumption & Transformation Losses at Generator end	1.93%	
2	720MW MHP	Unit-I	59.88	400kV MHP - Jigmeling Line - I	0.00	Unit-II under AMP. Unit-III under Shutdown. 400kV MHP-JLG Line I, II & III on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I & II (Interim) under Shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	60.01	400kV MHP - Jigmeling Line - IV	40.99	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.08	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	118.71	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-77.48	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.26	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.32	
		-	-	220kV Tsirang - Jigmeling Line	-41.29	
-	-	132kV Gelephu - Salakati Line	6.23			
Total	119.89	Auxiliary Consumption & Transformation Losses at Generator end	1.52%			
3	336MW CHP	Unit- I	61.27	220kV CHP - Birpara Line- I	-13.15	Unit-II under AMP. Unit-III on Standby. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	18.64	
		Unit- IV	54.25	220kV CHP - Semtokha Line- IV	81.99	
		-	-	220kV Malbase - Birpara Line	-35.82	
		-	-	66kV CHP - Chumdo Line	21.94	
		-	-	66kV CHP - Gedu Line	6.23	
		-	-	3x3MVA, 66/11kV TFR	0.88	
Total	115.52	Auxiliary Consumption & Transformation Losses at Generator end	-0.87%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	52.30	L/S & U/S Unit-I on Standby.
		Unit- II	6.10	66kV BHP - Lobeyasa Line	25.19	
		Total	6.10	220kV BHP - Tsirang Line	-59.06	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.64	L/S & U/S Unit-I on Standby.
		Unit- II	12.80	30MVA ICT, 220/66kV (HV)	19.86	
		Total	12.80	Auxiliary Consumption & Transformation Losses at Generator end	-0.90%	
6	126MW DHP	Unit-I	20.37	220kV DHP - Tsirang Line	20.15	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.91	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	20.37	Auxiliary Consumption & Transformation Losses at Gen. end	0.10%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	11.75	Unit-I on Standby. Unit-IV under AMP
		Unit-II	15.02	132kV KHP - Kilikhar Line	17.27	
		Unit- III	15.01	5MVA, 132/11kV TFR	0.60	
		Unit- IV	0.00	132kV Motanga - Rangia Line	6.35	
		Total	30.03	Auxiliary Consumption & Transformation Losses at Generator end	1.38%	

Note: Generation-Load Summary (MW) for January 31, 2023 at 18:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	423.68	355.15	351.11	109.82	4.04
2	Eastern Grid	149.92	173.53	171.30	-64.90	2.23
Total		573.60	528.68	522.41	44.92	6.27

Note: Generation-Load Summary for January 31, 2022 at 18:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	212.40	383.48	382.10	-107.35	1.38
2	Eastern Grid	291.08	95.94	93.42	131.41	2.52
Total		503.48	479.42	475.52	24.06	3.90

1. The Instantaneous load balance,calculated as (Total generation - (Total export-Import) - Total domestic load), do not tend towards zero. This could be due to the following reasons:

- i) Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
- ii) The clocks of all the locations are not synchronized.

2. This report is generated to give an idea of the generation & load flow for the system at a particular instant.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	February 1, 2023
Hours:	09:00 Hours

Date	Time	Load(MW)
28-Dec-22	18:03:26hrs	629.23

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	Unit-I & IV under Shutdown. Unit-III & V on Standby. 400kV THP- Siliguri Line I & IV on Standby..
		Unit- II	139.17	400kV THP - Siliguri Line - II	65.86	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	141.21	
		Unit- V	0.00	400kV Malbase - Siliguri Line	44.48	
		Unit- VI	69.84	-	-	
		Total	209.01	Auxiliary Consumption & Transformation Losses at Generator end	0.93%	
2	720MW MHP	Unit-I	55.15	400kV MHP - Jigmeling Line - I	0.00	Unit-II under AMP. Unit-III under Shutdown. 400kV MHP-JLG Line I, II & III on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I & II (Interim) under Shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.40	400kV MHP - Jigmeling Line - IV	65.42	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	72.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	112.94	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-47.89	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.52	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.60	
		-	-	220kV Tsirang - Jigmeling Line	-39.32	
-	-	132kV Gelephu - Salakati Line	-12.10			
Total	140.55	Auxiliary Consumption & Transformation Losses at Generator end	2.23%			
3	336MW CHP	Unit- I	56.82	220kV CHP - Birpara Line- I	-8.04	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	12.29	
		Unit- IV	53.27	220kV CHP - Semtokha Line- IV	80.02	
		-	-	220kV Malbase - Birpara Line	-23.20	
		-	-	66kV CHP - Chumdo Line	21.16	
		-	-	66kV CHP - Gedu Line	5.00	
		-	-	3x3MVA, 66/11kV TFR	0.68	
Total	110.09	Auxiliary Consumption & Transformation Losses at Generator end	-0.93%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	50.34	L/S & U/S unit-I on Standby
		Unit- II	12.80	66kV BHP - Lobeyasa Line	24.23	
		Total	12.80	220kV BHP - Tsirang Line	-55.98	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.74	L/S & U/S unit-I on Standby
		Unit- II	6.20	30MVA ICT, 220/66kV (HV)	18.69	
		Total	6.20	Auxiliary Consumption & Transformation Losses at Generator end	-1.74%	
6	126MW DHP	Unit-I	20.20	220kV DHP - Tsirang Line	19.99	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.64	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	20.20	Auxiliary Consumption & Transformation Losses at Generator end	0.05%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	13.83	Unit-I on Standby. Unit-IV under AMP.
		Unit-II	15.11	132kV KHP - Kilikhar Line	15.32	
		Unit- III	15.10	5MVA, 132/11kV TFR	0.73	
		Unit- IV	0.00	132kV Motanga - Rangia Line	10.47	
		Total	30.21	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	

Note: Generation-Load Summary (MW) for February 01, 2023 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	358.30	318.52	317.92	79.10	0.60
2	Eastern Grid	170.76	180.96	177.50	-49.52	3.46
Total		529.06	499.48	495.42	29.58	4.06

Note: Generation-Load Summary for February 01, 2022 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	207.86	331.60	330.06	-82.20	1.54
2	Eastern Grid	232.98	88.01	86.33	103.43	1.68
Total		440.84	419.61	416.39	21.23	3.22

1. The Instantaneous load balance,calculated as (Total generation - (Total export-Import) - Total domestic load), do not tend towards zero. This could be due to the following reasons:

- i) Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
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